

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-128365

(43)Date of publication of application : 09.05.2000

(51)Int.Cl.

B65H 1/26

(21)Application number : 10-303063

(71)Applicant : FUJI PHOTO FILM CO LTD

(22)Date of filing : 23.10.1998

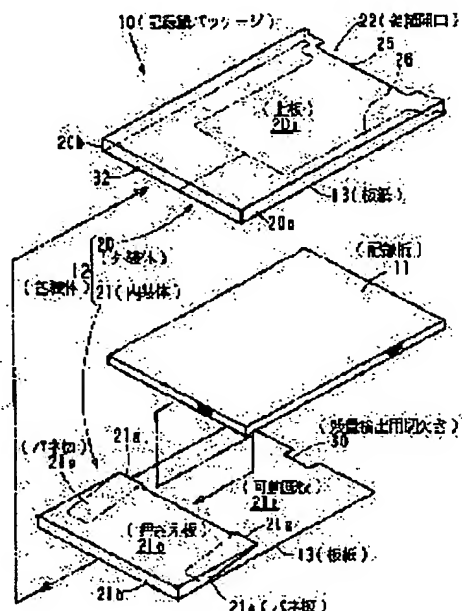
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## (54) RECORDING PAPER PACKAGE

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To improve a shading property and a moistureproofing property of recording paper in a package.

**SOLUTION:** An outer package 20 is formed in a thin square cylindrical shape. A push-up plate insertion port 26 is provided on a bottom plate of the outer package 20. A push-up plate of a paper feeding cassette is inserted from this insertion port 26. An inner package 21 is constituted by bending a movable bottom plate 21a, an end plate 21b and a presser plate 21c at bending lines. A spring plate 21e is provided on a head end of the presser plate 21c. Laminated recording paper 11 is inserted with its recording surface in the direction to face against the movable bottom plate 21a between the movable bottom plate 21a and the presser plate 21c. This inner package 21 is inserted into the outer package 20. The recording paper 11 is sandwiched between the movable bottom plate 21a and the presser plate 21c by a springing property of a bending part 21g of the spring body 21e. Each of the recording paper is closely attached to each other even when the number of sheets of the recording paper 15 is reduced. As no clearance is made between them, it is possible to restrain lowering of a shading property and a moistureproofing property.



## LEGAL STATUS

[Date of request for examination]

04.03.2004

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's]

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**CLAIMS**

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**[Claim(s)]**

[Claim 1] The cube type-like package object with which the end section is opened as feed opening in the detail-paper package which supplies the detail paper to a thermal printer, It is arranged on insertion opening of the recording paper Oshiage member formed in the bottom plate of a package object, and a bottom plate, and raises up. A free movable bottom plate, The recording paper package characterized by having two or more sheets of recording papers which are pinched between the presser-foot plate which presses down the recording paper to a movable bottom plate, and a movable bottom plate and a presser-foot plate, and by which the laminating was carried out.

[Claim 2] In a recording paper package for the recording paper which the laminating was carried out and was contained by the package object to be energized by the Oshiage member by the side of a thermal printer at the feed roller side by the side of a thermal printer, and supply the recording paper to a thermal printer by revolution of a feed roller Said package object is constituted from an rectangular pipe-like sheathing object and an inner package object inserted from the edge of this sheathing object. Said sheathing object A superior lamella, A bottom plate, the side plate which connects these edges on both sides, and roller insertion opening with which it is formed in said superior lamella, and said feed roller is inserted, The movable bottom plate on which it is formed in said bottom plate, and constitutes from Oshiage member insertion opening with which said Oshiage member is inserted, and the recording paper is put in said inner package object, The detail-paper package characterized by constituting from an end plate which is connected with this movable bottom plate and closes the open end section of said sheathing object, and a presser-foot plate which is connected with this end plate and pinches the detail paper with a movable bottom plate.

[Claim 3] In a recording paper package for the recording paper by which the laminating was carried out to be energized by the Oshiage member by the side of a thermal printer at the feed roller side by the side of a thermal printer, and supply the recording paper to a thermal printer by revolution of a feed roller A superior lamella and the end plate bent by 90 degrees to a superior lamella succeeding this superior lamella, The movable bottom plate bent by the location which meets a superior lamella succeeding this end plate, With insertion opening of said feed roller formed in the bending section of said end plate, the presser-foot plate with which a superior lamella is caudad bent succeeding the superior lamella of an opposite hand, and a superior lamella and a presser-foot plate Constitute the inner package object which pinches said recording paper, and the edges on both sides which intersect perpendicularly with the end plate continuation edge of said superior lamella are followed. The side plate which establishes the sheathing object which covers the recording paper put on said movable bottom plate, and follows said edges on both sides of the upper part of the body in this sheathing object, The detail-paper package characterized by preparing the Oshiage member insertion opening with which it constitutes from a fixed bottom plate connected with a side plate so that a superior lamella may be met, and said Oshiage member is inserted in said fixed bottom plate.

[Claim 4] Said movable bottom plate is a recording paper package claim 1 characterized by whether it is the same as the recording paper, and being formed somewhat more greatly thru/or given in any 3one.

[Claim 5] Claim 1 characterized by preparing the leaf which follows said presser-foot plate, bending this leaf, and energizing the recording paper to a movable bottom plate by the spring nature of this thru/or a recording paper package given in any 4one.

[Claim 6] Claim 1 characterized by turning this lamination side outside as said package object using the paper which laminated the hydrophobic poly membrane on one side thru/or a detail-paper package given in any 5one.

[Claim 7] The detail-paper package according to claim 6 characterized by using the paper board whose light transmission nature (300nm thru/or 500nm) is 1% or less.

[Claim 8] Claim 1 characterized by forming opening for residue detection for recording paper residue detecting-element material contacting the recording paper in said movable bottom plate thru/or a recording paper package given in any 7one.

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the detail-paper package used for a thermal printer, especially the thermal printer which used the sensitization thermal recording ingredient.

[0002]

[Description of the Prior Art] There are a direct thermal printer and a thermal transfer printer in a thermal printer, and the recording paper of dedication is used for it, respectively. Colorization is progressing with colorization of the latest image information in both. For example, as an example of the recording paper used for a direct thermal printer, the cyanogen sensible-heat coloring layer, the Magenta sensible-heat coloring layer, and the yellow sensible-heat coloring layer are \*\*\*\*(ed) one by one on the base material as indicated by JP,61-213169,A. The microcapsule which connotes a coloring raw material is distributed by each coloring layer. In this thermographic recording paper, coloring heat energy differs for every coloring layer. For this reason, a coloring layer can be made to color selectively by making heat energy differ. And before carrying out heat record of the lower layer by Ushiro who did heat record of the upper layer, it is established by irradiating the light of wavelength peculiar to a coloring layer [ finishing / heat record ], for example, ultraviolet rays, so that the upper layer may not color again. Since a coloring property is affected when it puts also under the usual light source for a long time, this thermographic recording paper is supplied, after it was contained by the protection-from-light bag and this has been further contained by the carton.

[0003] On the other hand, a thermal transfer printer has [ color / melting or the melting mold which is made to soften and is imprinted on the recording paper, and / of an ink film ] the sublimation mold which the recording paper is made to sublimate or diffuse in the ink of an ink film. And the exclusive paper with which the recording paper for idye sublimation printers was coated by polyester system resin is used for the recording paper for melting mold printers using the high coated paper of smooth nature. The recording paper for these thermal transfer printers is supplied, after the laminating of two or more sheets was carried out, it was contained by the moisture-proof bag and this has been further contained by the carton.

[0004]

[Problem(s) to be Solved by the Invention] In the common thermal printer, although the sheet paper cassette of a printer was loaded with the recording paper, set the front flesh side of the recording paper accidentally, the front face of the recording paper was soiled at the time of a set, or it exposed more than allowance in the recording paper of a sensitization sensible-heat mold, and the trouble from which desired print quality is not acquired had occurred not a little. Moreover, although two or more sheets of detail paper was usually set, as for the loading activity, it was troublesome that possibility that the detail paper will become scattering was during a set etc.

[0005] On the other hand, these people have proposed the recording paper package which enabled it to perform loading to the printer of the recording paper simply by JP,5-116774,A, without touching the recording paper directly. However, this detail-paper package puts the perforation into the body of a cassette made of paper, it cuts out some bodies of a cassette from this perforation at the time of an activity, forms opening for detail-paper blowdown etc., needs the cutoff from a perforation on the occasion of loading to a printer, and has the problem of taking time and effort.

[0006] Moreover, with the conventional detail-paper package, press lever opening is prepared in the package bottom other than roller insertion opening with which a feed roller enters. And the recording paper was lifted up with the press lever from this press lever opening, and the recording paper of the maximum upper layer is pushed against the feed roller. Therefore, since press lever opening other than

roller insertion opening is formed, if a detail-paper package is taken out from a sheet paper cassette, dust will enter from this press lever opening, or light and moisture will become easy to enter. Therefore, it becomes a problem by protection-from-light nature or dampproofing.

[0007] Furthermore, only by containing the recording paper on package objects, such as a body of a cassette, if the recording papers decrease in number by activity, the recording paper will become free in a package body conventionally. For this reason, light, moisture, etc. invade into a recording surface from the clearance between the recording papers, and there is inconvenience to which a coloring property is changed.

[0008] even if this invention can hold protection-from-light nature and dampproofing and the recording papers moreover decrease in number by activity -- the package inside of the body -- the recording paper -- rose \*\*\*\* -- it aims at offering the recording paper package it was made not to have things.

[0009]

[Means for Solving the Problem] In order to attain the above-mentioned object, with a detail-paper package according to claim 1 The cube type-like package object with which the end section is opened as feed opening, and insertion opening of the recording paper Oshiage member formed in the bottom plate of a package object, It is arranged on the bottom plate, and it raised up and has two or more sheets of recording papers which are pinched between a free movable bottom plate, the presser-foot plate which presses down the recording paper to a movable bottom plate, and a movable bottom plate and a presser-foot plate and by which the laminating was carried out.

[0010] A detail-paper package according to claim 2 constitutes a package object from an rectangular pipe-like sheathing object and the inner package object inserted from the edge of this sheathing object. Said sheathing object A superior lamella, A bottom plate, the side plate which connects these edges on both sides, and roller insertion opening with which it is formed in said superior lamella, and a feed roller is inserted, The movable bottom plate on which it is formed in said bottom plate, and constitutes from Oshiage member insertion opening with which the Oshiage member is inserted, and the recording paper is put in said inner package object, It connects with this movable bottom plate, and constitutes from an end plate which closes the open end section of said sheathing object, and a presser-foot plate which is connected with this end plate and pinches the recording paper with a movable bottom plate.

[0011] The end plate bent by 90 degrees to a superior lamella with a detail-paper package according to claim 3 succeeding a superior lamella and this superior lamella, With insertion opening of the feed roller formed in the bending section of the movable bottom plate bent by the location which meets a superior lamella succeeding this end plate, said end plate and the presser-foot plate with which a superior lamella is caudad bent succeeding the superior lamella of an opposite hand, and a superior lamella and a presser-foot plate constitute the inner package object which pinches the recording paper, and the edges on both sides which intersect perpendicularly with the end plate continuation edge of said superior lamella are followed. The sheathing object which covers the recording paper put on said movable bottom plate was established, this sheathing object was constituted from a side plate which follows said edges on both sides of the upper part of the body, and a fixed bottom plate connected with a side plate so that a superior lamella may be met, and the Oshiage member insertion opening with which the Oshiage member is inserted in said fixed bottom plate is prepared.

[0012] In addition, it is desirable whether it is the same as the recording paper in said movable bottom plate and that it forms somewhat more greatly. Moreover, it is desirable to prepare the leaf which follows said presser-foot plate, to bend this leaf, and to energize the recording paper to a movable bottom plate by the spring nature of this. It is desirable to turn this lamination side outside as said package object using the paper which laminated the hydrophobic poly membrane on one side. Moreover, as for paper, it is desirable to use the paper board whose light transmission nature (300nm thru/or 500nm) is 1% or less. Moreover, it is desirable to make the feed opening edge of a movable bottom plate follow, and to form opening for residue detection.

[0013]

[Embodiment of the Invention] In drawing 1, the detail-paper package 10 consists of a thermographic recording paper (only henceforth the detail paper) 11 by which the laminating is carried out, and a package object 12 which contains this. The package object 12 is formed in thin box-like one from the paper board 13.

[0014] The laminating of two or more papers is carried out, the paper board 13 becomes, as shown in drawing 2, and a laminating is usually carried out in the phase of paper making. When photosensitivity is in the recording paper contained on a package object, it is desirable that the paper board 13 is protection-from-light nature, and it is desirable that the permeability of visible and ultraviolet radiation (300nm

thru/or 500nm) is specifically 1% or less. It can attain, when carbon black, the color, and the refractive index make at least one layer of two or more papers which carried out the laminating contain optical absorption nature matter, such as 1.50 or more mineral matter, for example, titanium oxide, a barium sulfate, and a calcium carbonate, as an approach of giving protection-from-light nature to the paper board 13. Since some which colored especially the outermost layer of drum have the coloring effectiveness equivalent to printing, they are desirable.

[0015] Moreover, it is desirable at the point that more stable print quality is acquired by it in the small poly membrane 14 of steam permeability since the humidity inside a package object decreases lamination (lamination) and by applying or printing on one side of the paper board 13 irrespective of the environmental humidity on which what was reduced prints the steam permeability of the paper board 13. In this case, it is more desirable to prepare only in one side, to \*\*\*\* this processing side outside (for it to be the inside about a paper board side), and to form a package object rather than preparing the small layer of steam permeability in both sides of the paper board 13. A reason is because the moisturizincy effect of paper board 13 self is demonstrated by carrying out a paper board side inside. As a small poly membrane 14 of steam permeability, polyester film, a vinylidene chloride, a vinyl chloride, polypropylene, PURIECHIREN, polyvinyl alcohol, these copolymers, etc., such as polyethylene terephthalate, are raised. Usually, effectiveness sufficient by 5 microns or more 60 microns or less is discovered, and the thickness of these poly membranes 14 has especially desirable 10-30 microns. As basis weight of the paper board 13, 180 thru/or 650 g/m2 from a viewpoint of reinforcement and workability, further 280, or 450 g/m2 are desirable.

[0016] As shown in drawing 1, two or more sheet laminating of the recording paper 11 is carried out to the package object 12, and it is contained. It is desirable in the case of the recording paper which has photosensitivity, to contain so that a recording surface (sensitization side) may touch a movable bottom plate in respect of protection from light. Moreover, the number of sheets of the recording paper contained can be suitably chosen with the thickness of the recording paper etc. Coefficient of friction by the side of the package inside of the body where the recording paper touches is desirable when performing feeding by which keeping step with coefficient of friction of a recording paper table flesh side was stabilized, and it is desirable to specifically adjust to less than 20% of upper and lower sides. If coefficient of friction by the side of the package inside of the body where the recording paper touches is more remarkably [ than coefficient of friction of a recording paper table flesh side ] large, paper cannot be fed good [ the one last ], but there is a possibility that two or more sheets of recording papers may be simultaneously fed to it if remarkably small conversely.

[0017] As shown in drawing 3, the detail-paper package 10 is put in and sold to the storage bag 16 which has protection-from-light nature and dampproofing, and it is opened by cutoff section 16a of a storage bag 16 being broken along with perforated line 16b at the time of an activity. Moreover, in order to contain again the detail-paper package 10 in the middle of an activity, near the perforated line 16b of a storage bag 16, the fastener 17 made of synthetic resin is formed. A fastener 17 consists of 1 set of fitting protruding lines as everyone knows, and it is sealed by fitting of one protruding line being carried out to the protruding line of another side. This fastener 17 may be omitted.

[0018] In addition, after pulling out the detail-paper package 10 from a storage bag 16, it is desirable to make it not omitted [ the detail paper 11 ] from the package object 12. As the approach of omission prevention, it is attained by plugging up feed opening with the feed opening tape 100. If the tape 100 for omission prevention is used, since the recording paper 11 and movable bottom plate 21a will stick, the moisture-proof effectiveness is also acquired. Furthermore, after removing this tape 100, that [ its ] in which \*\*\*\* does not remain is desirable.

[0019] As shown in drawing 1, the package object 12 consists of inner package objects 21 inserted from the edge of the tubed sheathing object 20 and this sheathing object 20. As shown in drawing 4 (A), the sheathing object 20 consists of superior lamella 20a, two side plates 20b and 20c, and division bottom plates 20d and 20e currently divided into two pieces. As shown in (B) and (C), these are formed in the shape of [ thin ] an rectangular pipe by piling up 20g of edge-left-for-applying-paste sections of the edge of the division bottom plates 20d and 20e, and pasting up, after a trough chip box is carried out at the include angle of 90 degrees by 20f of bend lines. Superior lamella 20a has width of face by which it is constituted in the shape of [ of somewhat larger size than the recording paper 11 ] a rectangle, and movable bottom plate 21a can move easily. This sheathing object 20 is constituted as the field which said poly membrane 14 laminated turns to an outside.

[0020] Let one edge of the sheathing object 20 be the feed opening 22. Moreover, the roller insertion opening 25 cuts to superior lamella 20a, and is lacked and formed in it. The roller insertion opening 25 is

following the feed opening 22. The feed roller 24 (refer to drawing 8 ) of a thermal printer enters into this roller insertion opening 25.

[0021] Notches 26a and 26b are formed in the division bottom plates 20d and 20e, and these notches 26a and 26b are following the feed opening 22. When assembled by these notches 26a and 26b as a sheathing object 20, the Oshiage plate insertion opening 26 (refer to drawing 1 ) is constituted. To this Oshiage plate insertion opening 26, the Oshiage plate 28 of a sheet paper cassette 27 (refer to drawing 8 ) enters, and the recording paper 11 is turned to the feed roller 24, and is energized.

[0022] A printer can also be made to recognize a record paper type exception by sticking the label 29 which recorded the information about the detail paper 11 inserted in some package objects 12, as shown in drawing 4 . It operates specifically emitting warning to the print directions which stuck the label 29 which recorded bar code 29a for a record paper type exception on 20d of division bottom plates, formed the sensor which reads it in the printer, read the record paper type exception, and were mistaken, as shown in drawing 4 etc. Moreover, in the case of a direct thermographic recording paper, the sensibility property of the detail paper can be bar-code-ized, and it can also be compensated for printer actuation so that the always optimal image can be printed.

[0023] The inner package object 21 is constituted and he is trying for the lamination side to be outside suitable by meeting 21d of bend lines and carrying out the trough chip box of movable bottom plate 21a, end plate 21b, and the presser-foot plate 21c to 90 degrees, as shown in drawing 5 . Leaf 21e is continuously prepared at the head of presser-foot plate 21c through 21f of bend lines.

[0024] As shown in drawing 1 , the recording paper 11 is inserted between movable bottom plate 21a and presser-foot plate 21c, as the recording surface meets the top face of movable bottom plate 21a. as for said leaf 21e, the recording paper 11 is energized by the spring nature whose movable bottom plate 21a is an alligator bending \*\*\*\* cage and 21g of this bending section at the movable bottom plate 21a side. Therefore, the detail paper 11 is pinched by movable bottom plate 21a and leaf 21e.

[0025] The notch 30 for residue detection is formed in the center section at the head of movable bottom plate 21a, from this notch 30, the head of residue detection lever 62b (refer to drawing 8 ) explained later enters, and this head contacts the recording paper 11.

[0026] The inner package object 21 is inserted from the opening 32 of an opposite hand in the feed opening 22 of the sheathing object 20. The both-sides edge of end plate 21b of the inner package object 21 projects slightly by the thickness of the sheathing object 20, and is formed, and this projecting part has become a stopper. In the end face of the side plates 20b and 20c of the sheathing object 20, this stopper is regulated so that the inner package object 21 may not enter into a sheathing object any more. Furthermore, it is desirable to fix the inner package object 21 to the sheathing object 20 with adhesive tape etc.

[0027] Thus, since the constituted detail-paper package 10 uses the paper which carried out the lamination of the outside surface by the hydrophobic poly membranes 14, such as a resin film, it is excellent in reinforcement and does not have generating of deformation, bending, etc., and also its dampproofing improves. and the lamination of the inside is carried out -- \*\* -- paper -- since it remains as it is, this paper acts as moisture absorption and gas conditioning material. Therefore, the recording paper 11 is held at moderate humidity.

[0028] Drawing 6 and drawing 7 are the perspective views showing a sheet paper cassette 27, and drawing 8 is the sectional view of a sheet paper cassette 27. It consists of a body 35 of a cassette, and a lid 36, and the whole is formed in thin box-like one so that a sheet paper cassette 27 may build in the detail-paper package 10.

[0029] A lid 36 is attached in the body 35 of a cassette through the mounting shank 37. Thereby, as shown in drawing 7 , the package loading section 38 is loaded with the detail-paper package 10 in the state of open [ to which the lid 36 stood up ]. Moreover, according to the closed state (refer to drawing 6 ) according to which a lid 36 becomes level, this closed state is maintained because the stop pawl 39 stops to the locking device 40 within the body 35 of a cassette. When opening a lid 36, by carrying out slide migration of the lock release button 41, a stop with the stop pawl of a locking device 40 and the stop pawl 39 by the side of a lid is canceled, and disconnection of a lid 36 is attained.

[0030] It can be easily loaded now with the package loading section 38 by being formed somewhat more greatly than the detail-paper package 10. Moreover, the alignment projection 42 is formed in one side attachment wall in the loading section 38. Furthermore, the alignment mark 43 is printed by the top face of the sheathing object 20. Therefore, by inserting the detail-paper package 10 in the body 35 of a cassette so that these may be doubled, it is loaded with the detail-paper package 10 with the right sense, and incorrect loading is prevented.



[0031] The bar code display window 44 is formed in pars-basilaris-ossis-occipitalis 35a of the body 35 of a cassette. The bar code display window 44 is formed in the location corresponding to the bar code label 29 (refer to drawing 4) of the detail-paper package 10. This bar code display window 44 sticks a transparent plastic plate on opening of pars-basilaris-ossis-occipitalis 35a, and is constituted.

[0032] As shown in drawing 8, the Oshiage plate 28 is attached in the package loading section 38 rotatable through the mounting section 46. The Oshiage plate 28 is energized up with the coil spring 47, and pushes up movable bottom plate 21a in the detail-paper package 10 up.

[0033] Where a lid 36 is closed, near said mounting shank 37, the clearance is formed between the body 35 of a cassette, and the lid 36, and the feed opening 50 is constituted by this clearance. The recording paper separation section 51 is projected and formed in the body 35 side of a cassette at the feed path near the feed opening 50.

[0034] As shown in drawing 7, in the center of the detail-paper separation section 51, the detail-paper separation block 52 made of rubber is arranged. As for the detail-paper separation block 52, top-face 52a is made into the inclined plane, and this top-face 52a projects aslant to the detail-paper path. Therefore, the detail paper 11 laps, and when duplex delivery is carried out, only the lower detail paper 11 stops by friction between the separation blocks 52 made of rubber, and paper is fed only to the upper detail paper 11. Furthermore, two separation projections 53 are detached and formed in the recording paper separation section 51. This separation projection 53 is stopped at the head of the recording paper 11 of the bottom at the time of duplex delivery being carried out, and prevents that delivery.

[0035] As shown in drawing 6 and drawing 7, the roller opening 55 is formed in the lid 36 of a sheet paper cassette 27. This roller opening 55 is formed in the location corresponding to the roller insertion opening 25 of the detail-paper package 10. As shown in this roller opening 55 at drawing 8, the feed roller 24 enters and this feed roller 24 contacts the detail paper 11 of the maximum upper layer of the detail-paper package 10. The feed roller 24 rotates in the feed direction in the case of a print. This pulls out only the detail paper 11 of the maximum upper layer from the detail-paper package 10, and paper is fed to the print stage of a thermal printer.

[0036] As shown in drawing 6 and drawing 9, the top face of a lid 36 serves as the paper output tray. For this reason, the recording paper guides 57 and 58 are projected and formed in the both sides of a lid 36. The recording paper guides 57 and 58 guide the both sides of the recording paper 11, and are formed for a long time along the long side of a lid 36.

[0037] As shown in drawing 7, recording paper residue display 60 [ a total of ] is formed in the body 35 of a cassette. As shown in drawing 10, detail-paper residue display 60 [ a total of ] consists of the residue display window 61, a residue detection lever 62, a residue display lever 63, and a maintenance plate 64. As shown in drawing 6, in the feed opening 50 of a sheet paper cassette 27, the residue display window 61 is formed in the edge of an opposite hand, and consists of opening 65 formed in the body 35 of a cassette, and a transparent plastic plate 66 which closes this.

[0038] As shown in drawing 11, the residue detection lever 62 is attached in the mounting bearing 67 formed in pars-basilaris-ossis-occipitalis 35a of the body 35 of a cassette free [ rotation ]. The residue detection lever 62 makes detection lever section 62b and engagement lever section 62c project to mounting shaft 62a, and is formed in it in one. As shown in drawing 8, detection lever section 62b is formed so that the head may project from notch 28 for residue detection a of the Oshiage plate 28.

[0039] Two engagement pawls 68 are projected and formed at the head of engagement lever section 62c, and this two engagement pawl 68 enters into the engagement hole 69 formed in the end of the residue display lever 63. This transmits revolution conversion of the residue detection lever 62 to the residue display lever 63.

[0040] As shown in drawing 10, the residue display lever 63 is formed in the L character configuration of engagement lever section 63a and display lever section 63b, and is attached in pars-basilaris-ossis-occipitalis 35a of the body 35 of a cassette by mounting shaft 35c free [ rotation ]. On this residue display lever 63, the maintenance plate 64 is fixed on the mounting screw 74.

[0041] It twists between the residue display lever 63 and pars-basilaris-ossis-occipitalis 35a, the spring 70 is arranged, and this spring 70 energizes the residue display lever 63 counterclockwise. Compared with the die length from the engagement hole 69 of engagement lever section 63a to mounting shaft 35c, the head of display lever section 63b and die length to mounting shaft 35c are lengthened. Thereby, small revolution conversion of the residue detection lever 62 is changed into big revolution conversion at the head of the residue display lever 63.

[0042] The head of display lever section 63b is bent at 90 degrees, and label attachment section 63c is formed of this bending part. The residue display label 71 is stuck on this label attachment section 63c.



[0043] As shown in drawing 12, the residue display label 71 is arranged in the location which meets the residue display window 61. The residue display label 71 consists of recording-paper-less display area 72 of the shape of a rectangle which shows a residue "0", and residue display area 73 which shows a residue degree at white and an area rate of being green. The recording-paper-less display area 72 is applied in red, and it turns out by this being displayed on the residue display window 61 of the body 35 of a cassette that there is no recording paper 11 into the body 35 of a cassette at a glance.

[0044] Moreover, in two Elian Misumi who divided rectangle area with the one diagonal line, it is white, and it is green in the bottom, an upside is distinguished by different color with, and the residue display area 73 is constituted [ upside ]. And with the rate of the area of the white which appears in the residue display window 61, and the area 73a and 73b of being green, as are shown in drawing 11 (C), and there are many residues of the recording paper 11 when the area of green area 73b is large and it is shown in drawing 11 (B), the area of white area 73a becomes large, and when the area of green area 73b is small, it indicates that there are few residues.

[0045] If the recording paper 11 decreases as shown in drawing 8, corresponding to this decrease, the recording paper 11 of the lowest layer will change to the feed roller 24 side. This conversion is detected as revolution conversion of the residue detection lever 62. As shown in drawing 11, revolution conversion of the residue detection lever 62 is transmitted to the residue display lever 63 through engagement lever 62c. Thereby, as shown in drawing 1010, the head of display lever section 63b rotates counterclockwise. According to this revolution conversion, the residue display label 71 is displayed on the residue display window 61 like drawing 12 (A) - (C).

[0046] For example, as shown in drawing 12 (A), in the condition that there is no recording paper 11, the recording-paper-less red display area 72 is displayed on the residue display window 61. Moreover, in the condition that the recording paper remains, as shown in drawing 12 (B) and (C), the residue display area 73 where white area 73a and green area 73b were intermingled is displayed on the residue display window 61. Thereby, it turns out that the recording paper remains at a glance. Moreover, since the remaining number of sheets of the recording paper is understood from the decrease condition of the thickness of the recording paper which carried out the laminating, according to the thickness of this recording paper, the residue detection lever 62 carries out revolution conversion of it. Therefore, since the white of the residue display area 73 and a green area rate are changed, when green decreases by this revolution conversion, it turns out that the recording papers are decreasing in number.

[0047] Drawing 9 is the perspective view showing a thermal printer 56. The opening 76 of a sheet paper cassette 27 is formed in the front face 75 of a thermal printer 56, and a sheet paper cassette 27 is inserted in this. If a sheet paper cassette 27 is set to an opening 76, as shown in drawing 8, the feed roller 24 will enter in the roller opening 55 of a lid 36. Moreover, since the recording paper 11 in a sheet paper cassette 27 is energized up with the Oshiage plate 28, it is made for the recording paper 11 of the maximum upper layer to always be contacted by the feed roller 24.

[0048] The actuation key section 77, the insertion opening 79 of SmartMedia 78, and the electric power switch 80 other than an opening 76 are formed in the front face 75. If each key of the actuation key section 77 is operated and print actuation is directed, the image for a print will be displayed on the television set as an external display 81. A print will be started, if the print key of the actuation key section 77 is operated after checking this.

[0049] On the occasion of a print, the feed roller 24 rotates in the feed direction first, only the detail paper 11 of the maximum upper layer of the detail-paper package 10 in a sheet paper cassette 27 is pulled out, and paper is fed in a thermal printer 56. Sequential record is performed on the recording paper 11 to which paper was fed by the thermal head 3 color plane as everyone knows. This record of one line is performed at a time, and it drives corresponding to the pixel which each heater element of a thermal head records synchronizing with delivery of the recording paper 11. And an optical corresponding fixation lamp is turned on and optical fixation is performed so that it may not color, in case a sensible-heat coloring layer [ finishing / record ] is heat record of the following layer. After ending sequential record 3 color planes, the recording paper 11 is discharged on the lid 36 of a sheet paper cassette 27, and a print ends it.

[0050] If the recording paper 11 runs short, movable bottom plate 21a of the package object 12 will be raised up with the Oshiage plate 28. Moreover, presser-foot plate 21c and leaf 21e press down the recording paper 11 of the maximum upper layer caudad. Therefore, a clearance does not occur on each recording paper 11, and lowering of dampproofing or protection-from-light nature is suppressed. Moreover, even if the Oshiage plate insertion opening 26 is formed in the bottom plates 20d and 20e of the sheathing object 20, since movable bottom plate 21a of the inner package object 21 has stuck to the

recording paper 11, dust etc. does not enter the clearance between each recording paper 11.

[0051] When changing the class of recording paper 11 into the thick recording paper for a seal print, for example from an ordinary thermographic recording paper, exchange of the recording paper package 10 is performed. The taken-out detail-paper package 10 is put in by the storage bag 16 shown in drawing 3, is that a fastener 17 is closed and is saved in the state of moisture proof and protection from light.

[0052] With the above-mentioned operation gestalt, although the package object 12 was constituted from establishing separately the sheathing object 20 and the inner package object 21, and inserting the inner package object 21 in the sheathing object 20, in addition as shown in drawing 13, one sheet of paper board 90 may be bent, and the package object 91 which unified the sheathing object and the inner package object may be used. Drawing 13 (A) is the development view of this package object 91. 91d of presser-foot plates is made to follow the roller insertion opening 91b side of superior lamella 91a through bend line 91c with this operation gestalt. Furthermore, two leaves 91e is made to continue at the head of 91d of presser-foot plates through 91f of bend lines.

[0053] Moreover, 91g of end plates is made to follow roller insertion opening 91b of superior lamella 91a through bend line 91c at the edge of an opposite hand. 91h of movable bottom plates is made to follow 91g of this end plate through bend line 91c further. Furthermore, side plate 91j and division bottom plate 91k are made to follow the edges on both sides of superior lamella 91a through bend line 91c like the sheathing object 20 shown in drawing 4.

[0054] After bending leaf 91e to the down side on the occasion of an assembly, it bends so that 91d of presser-foot plates may be located in the superior lamella 91a bottom. Next, as shown in drawing 13 (B), 91h of movable bottom plates and 91g of end plates are bent at 90 degrees, and 91h of movable bottom plates is located in the lower part of 91d of presser-foot plates. Then, between 91d of presser-foot plates, and 91h of movable bottom plates, that recording surface is turned to 91h of movable bottom plates, and the recording paper is inserted.

[0055] Next, as shown in (C), side plate 91j and division bottom plate 91k are bent at 90 degrees, the recording paper and 91h of movable bottom plates are wrapped, and 91m of edges left for applying paste of division bottom plate 91k is pasted up with adhesives next. In addition, although 91m of edges left for applying paste is prepared in division bottom plate 91k and these were pasted up with this operation gestalt, a division location and the formation location of an edge left for applying paste 91 are not limited to this. For example, you may prepare in side plate 91j. Moreover, an edge left for applying paste may be formed in both side plate 91j, superior lamella 91a and side plate 91j, and bottom plate 91k, and you may paste up in these parts.

[0056] With the above-mentioned operation gestalt, although this invention is carried out to a thermographic recording paper, the detail paper of a sublimation mold or a thermofusion mold may be contained in a detail-paper package, for example, without being limited to this.

[0057]

[Effect of the Invention] Insertion opening of the recording paper Oshiage member which was formed in the bottom plate of a cube type-like package object and a package object according to this invention, The presser-foot plate which is arranged on the bottom plate, raises up and presses down the recording paper to a free movable bottom plate and a movable bottom plate, It has two or more sheets of recording papers which are pinched between a movable bottom plate and a presser-foot plate and by which the laminating was carried out, and since the recording surface was turned to the movable bottom plate, the recording paper contained it and it is held so that the recording papers which carried out the laminating may stick, a clearance does not occur in a recording surface and protection-from-light nature and dampproofing are held.

[0058] By constituting said package object from a tubed sheathing object and an inner package object in which it is inserted from the edge of this sheathing object, it can be made dual structure and pinching of the recording paper which carried out the laminating can be ensured. Moreover, it can be made dual structure with an easy configuration by making the both sides of the superior lamella between feed opening and an end plate follow, and establishing the sheathing object which covers the recording paper put on said movable bottom plate.

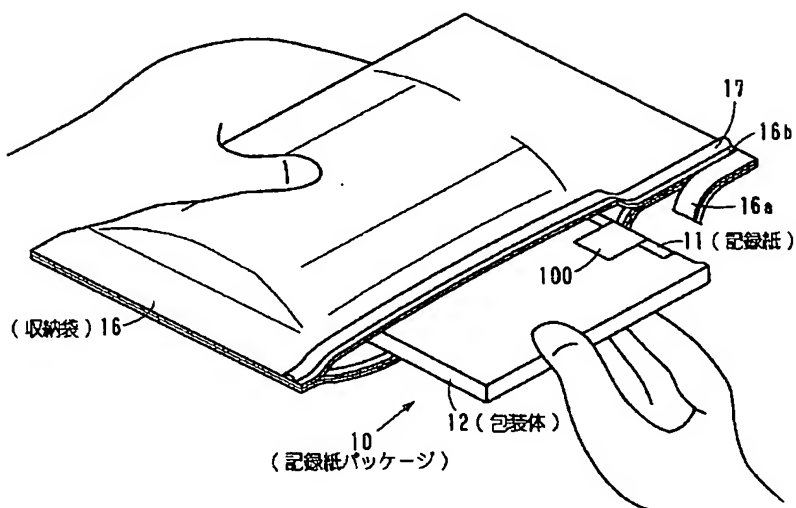
[0059] Paper comes to act as a gas conditioning agent or a desiccant by using the paper which laminated the hydrophobic poly membrane as a package object, and turning this lamination side outside. Therefore, even if environmental humidity changes, since the humidity in a detail-paper package changes gently, it is lost that a coloring property changes of it rapidly. Moreover, rigidity can improve by lamination, a detail-paper package can be strengthened, and deformation etc. is suppressed. Furthermore, by using the paper board whose light transmission nature (300nm thru/or 500nm) is 1% or less, protection-from-light nature

improves and it will become the optimal as a package of the sensitization thermosensitive detail paper. [0060] By making the feed opening edge of a movable bottom plate follow, and forming opening for residue detection, with feed opening, it becomes unnecessary to newly prepare opening for residue detection in a package object separately, and lowering of moisture proof and protection-from-light nature is suppressed. And since it prepares in a movable bottom plate side, interference with a feed roller is avoided and residue detection of the recording paper can be performed easily.

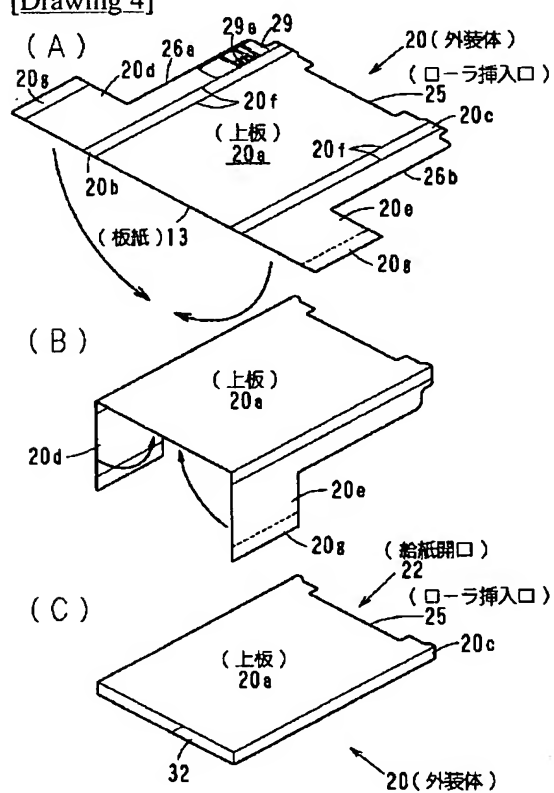
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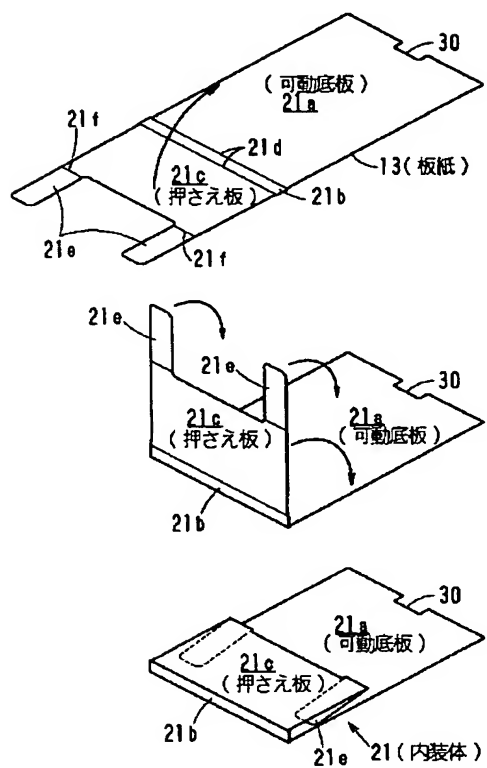




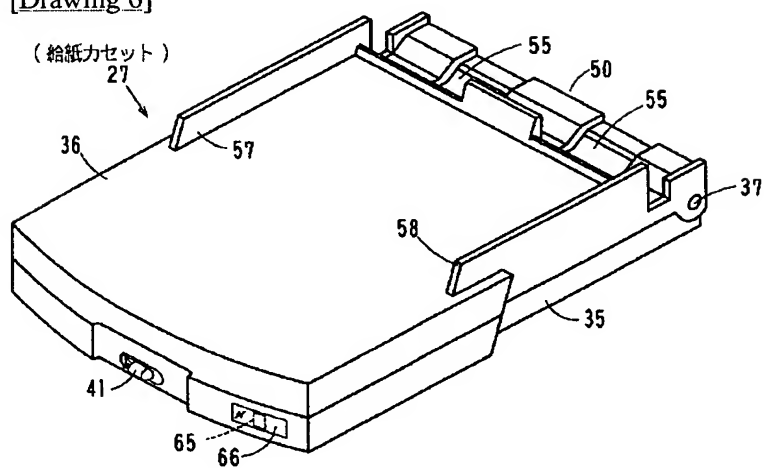
[Drawing 4]



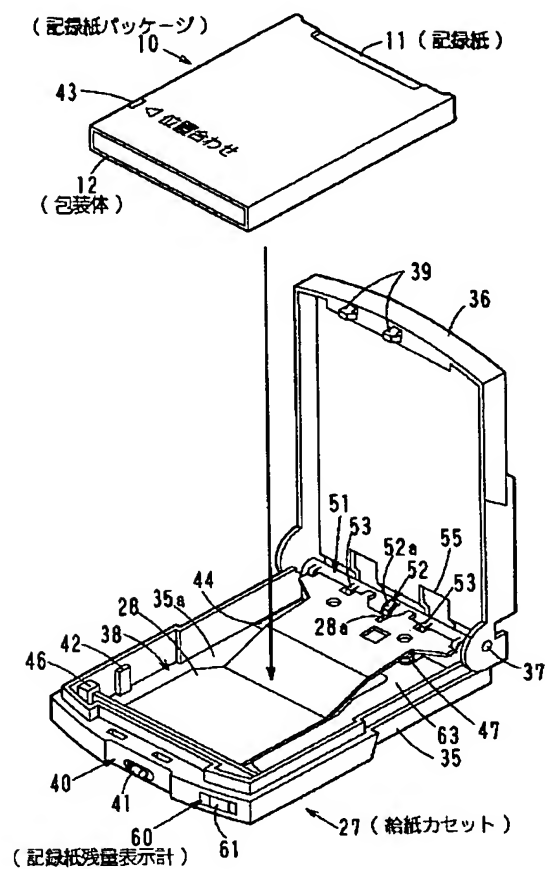
[Drawing 5]



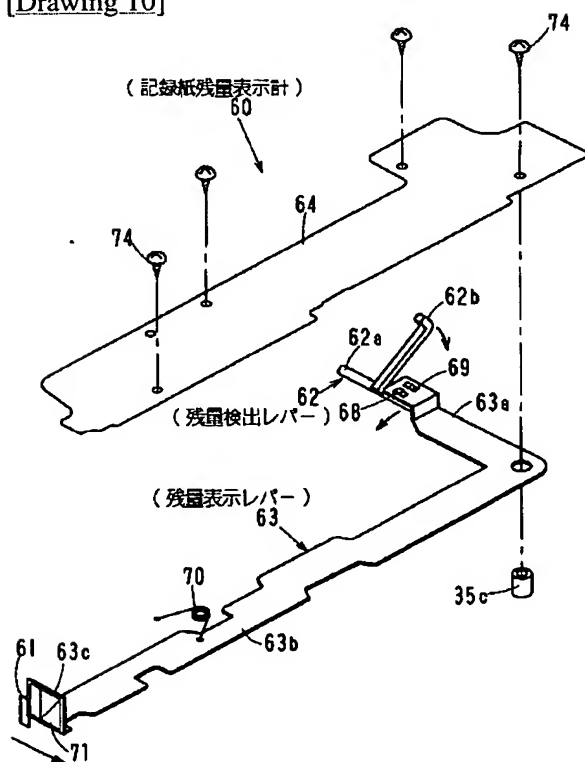
[Drawing 6]



[Drawing 7]

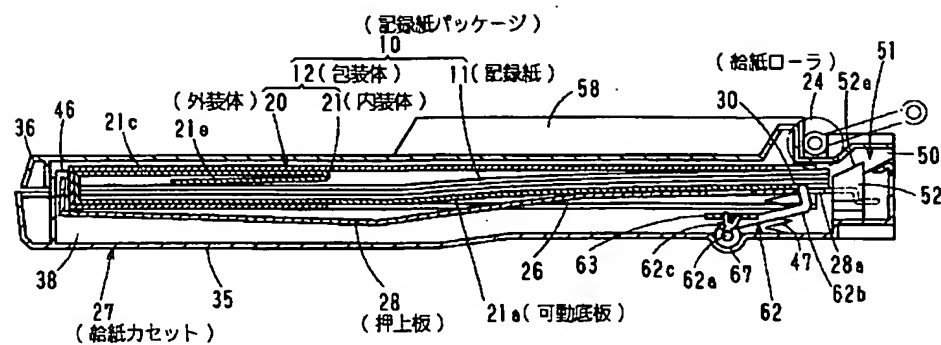


[Drawing 10]

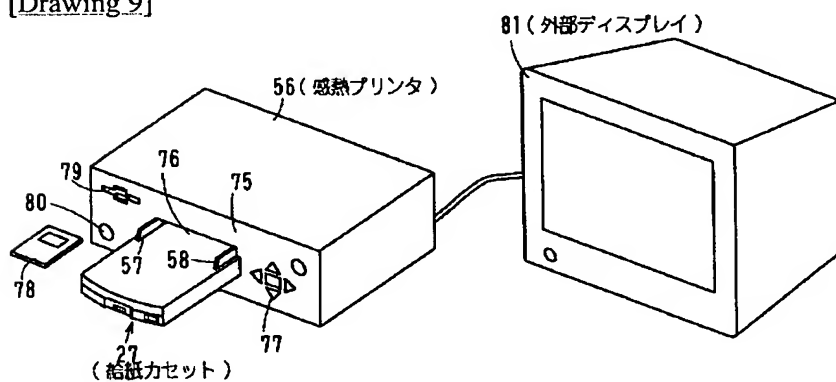


[Drawing 8]

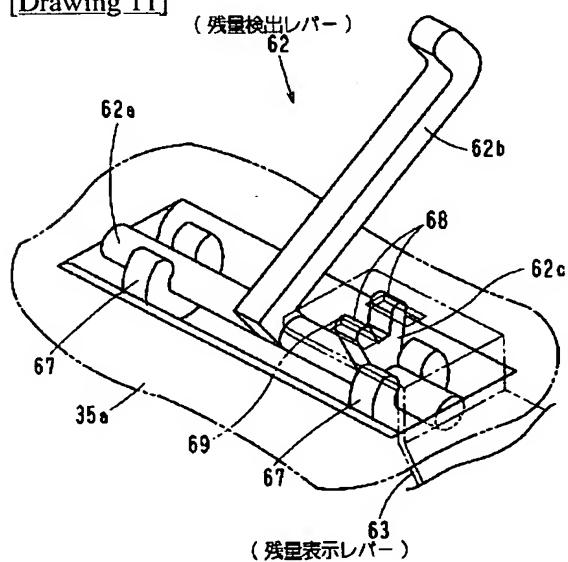




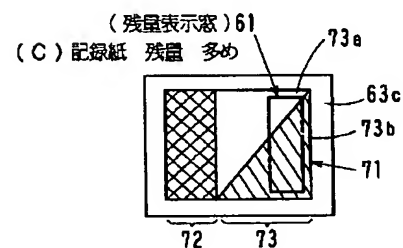
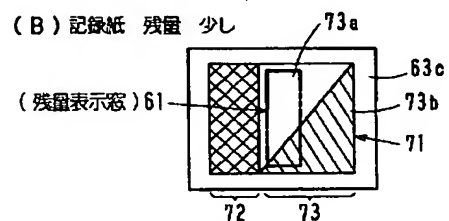
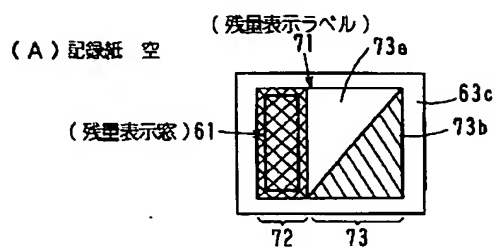
[Drawing 9]



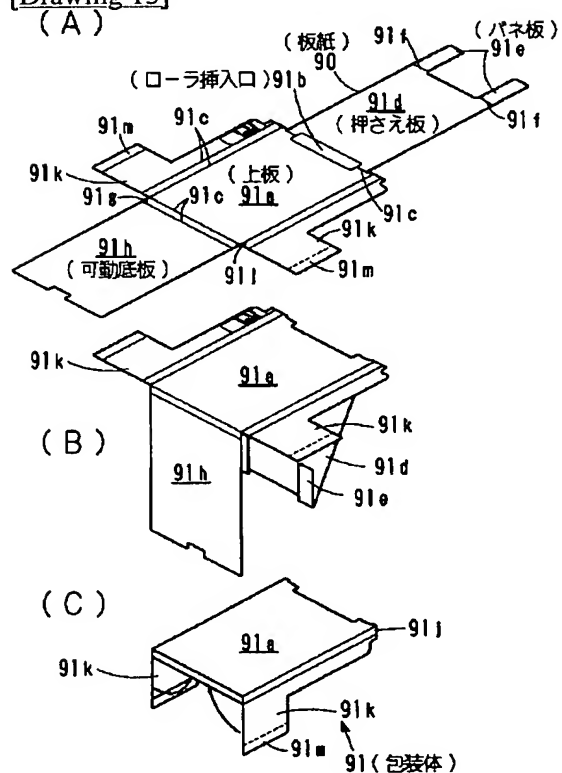
[Drawing 11]



[Drawing 12]



[Drawing 13]



[Translation done.]